



SystemC CCI WG

Preset Values from a Configuration File

P V S Phaneendra, CircuitSutra Technologies Pvt. Ltd,
August 2011



Preset Values from a Configuration File

- **Objectives are to demonstrate the following :**
 - Understand the precedence between the default, preset and set values
 - Processing configuration file to establish preset values

Example Illustration (1)

- Create an instance of the class that reads the configuration file within the `sc_main` function.
- `Cci_configFile_Tool` reads name-value pairs from the configuration file and assigns to the respective parameters accordingly.

Within `sc_main`

Include the "`cci_configFile_Tool.h`"

Include the configuration file as shown below :

```
cci_configFile_Tool configTool("configFileTool");  
configTool.config("Configuration_File.txt");
```

Reads the file that stores the preset values
Ex: `param_owner.mutable_int_param 10`
`param_onwer.mutable_string_param preset`
`param_owner.mutable_int_param 15`

Configuration File

Example Illustration (2)

Class *cci_configFile_Tool* Implementation

Class *cci_configFile_Tool* is a simple C++ class

Define a *cci::cci_originator* instance *mToolOriginator*

Get handle **m_broker** to the global broker
m_broker(cci::get_global_broker(mToolOriginator));

Within **API**, *inline void config (const char* filename)*,
the function reads the file *Configuration_File.txt* line by line using an iterator.

It assigns the *prest values* to the cci-parameters read from the file using the broker *m_broker*
m_broker.set_prest_value(it->first.c_str(), cci::cci_value::from_json(it->second.c_str()));

String passed from the configuration
file containing parameter_name

String passed from the configuration
file containing parameter_value

Reads the file that stores the preset values
Ex: param_owner.mutable_int_param 10
param_onwer.mutable_string_param preset
param_owner.mutable_int_param 15

Configuration File

Example Illustration (2)

Parameter_Owner

Integer Parameter Value : *int_param.get()* : 10
Float Parameter Value : *float_param.get()* : 123.45
String Parameter Value : *str_param.get()* : preset

Parameter_Configurator

Get references of the integer, float and string cci-parameters
cci::cci_param_handle int_param_ptr =
m_broker.get_param("param_owner.mutable_int_param");

cci::cci_param_handle float_param_ptr =
m_broker.get_param("param_owner.mutable_float_param");

cci::cci_param_handle str_param_ptr =
m_broker.get_param("param_owner.mutable_string_param");

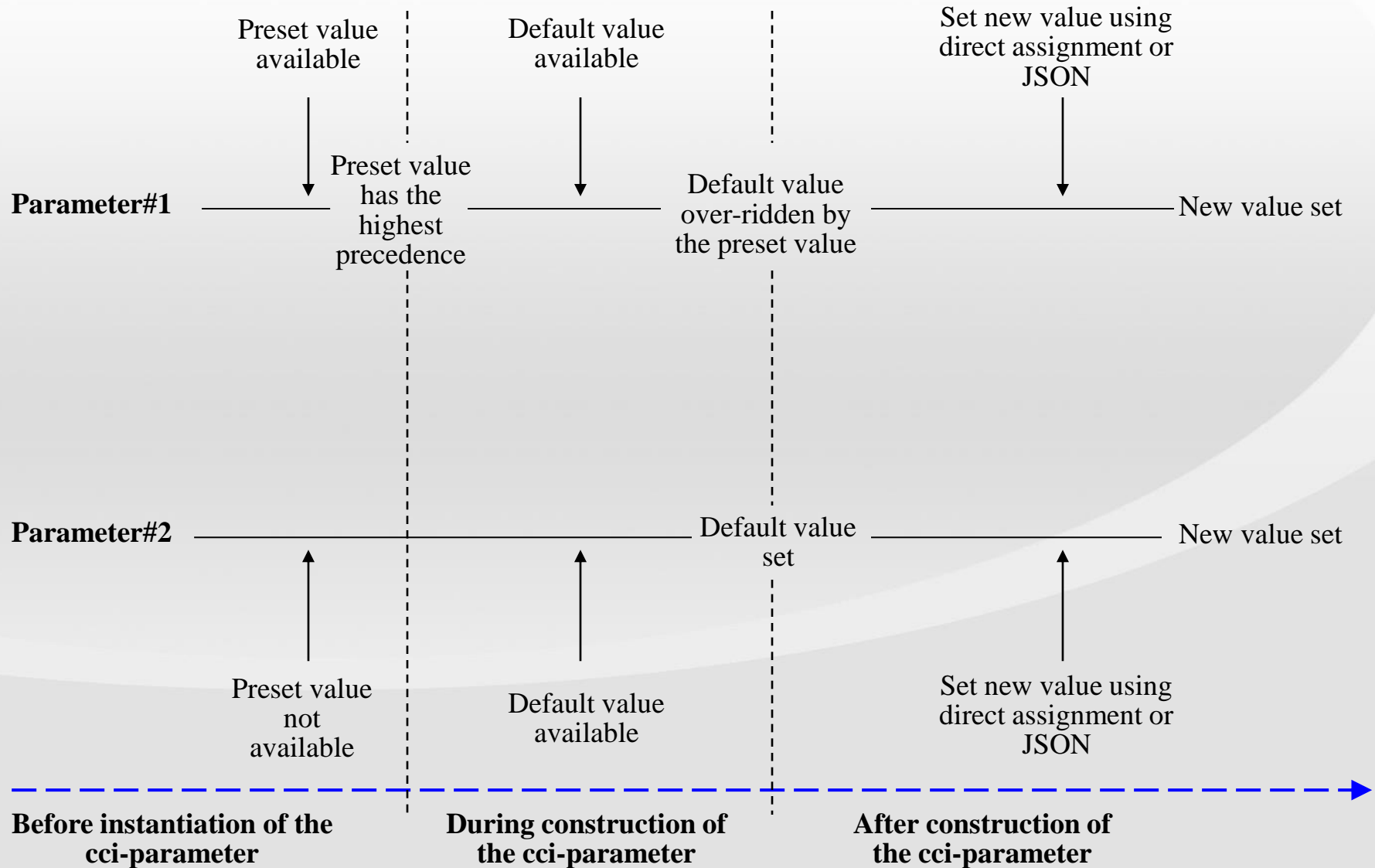
@ 0 ns

Set new values to 'integer' and 'string' type parameters
Integer Parameter Value : *int_param.set_cci_value(cci_value("20"))*
String Parameter Value :
str_param.set_cci_value(cci_value::from_json("configure"))

@ 5 ns

Integer Parameter Value : *int_param.get_value()* : 20
Float Parameter Value : *float_param.get_value()* : 123.45
String Parameter Value : *str_param.get_value()* : configure

Precedence of Prest, Default & Set Values



Expected Output

(ex17_Preset_Values_from_Config_File.log)

SystemC Simulation

ConfigFile_Api: Applying preset value of param 'param_owner.mutable_int_param' to '15'

ConfigFile_Api: Applying preset value of param 'param_owner.mutable_string_param' to '"preset"'

Info: param_owner: @0 s, [OWNER C_TOR] : Int Parameter Value : 15

Info: param_owner: @0 s, [OWNER C_TOR] : Float Parameter Value : 123.45

Info: param_owner: @0 s, [OWNER C_TOR] : String Parameter Value : preset

Info: param_setter: @0 s, [CFGR C_TOR] : Integer parameter exists

Info: param_setter: @0 s, [CFGR C_TOR] : Float parameter exists

Info: param_setter: @0 s, [CFGR C_TOR] : String parameter exists

Info: sc_main: Begin Simulation.

Info: param_setter: @0 s, @ 0 s

Info: param_setter: @0 s, [CFGR] : Set integer parameter value to '20'

Info: param_setter: @0 s, [CFGR] : Set string parameter value to 'configure'

Info: param_owner: @5 ns, @ 5 ns

Info: param_owner: @5 ns, [OWNER] : Int Parameter Value : 20

Info: param_owner: @5 ns, [OWNER] : Float Parameter Value : 123.45

Info: param_owner: @5 ns, [OWNER] : String Parameter Value : configure

Info: sc_main: End Simulation.